

Attorney Docket No. 248091US-2S DIV
Inventor: Tadashi KOJIMA
Preliminary Amendment filed: January 29, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Original): A data processing method, wherein:

digital data is processed in bytes to constitute one information data block in $(M \times N)$ bytes of M rows and N columns;

data is arranged in bytes in the information data block, so that data is arranged in the data transmission order from the 0th column to the (N-1)-th column for each row while data is arranged in the data transmission order from the 0th row to the (M-1)-th row;

$(K \times M)$ rows $\times N$ columns matrix block is further arranged which is a set of the information data block, and which is constituted of K information data blocks composed of information data blocks from the 0th information data block to the (K-1)-th information data block which continue in the data transmission order;

on each column of $(K \times M)$ bytes of the matrix block an error-correcting word PO-a $(K \times Q)$ or PO-a $((K/2) \times Q)$ bytes is created at least with respect to only even-number data $(K \times M/2)$ bytes, and an error-correcting word PO-b $(K \times Q)$ or PO-b $((K/2) \times Q)$ bytes is created at least with respect to only odd number data $(K \times M/2)$ bytes;

PO-a and PO-b is scattered and arranged into K information data blocks which is constituted of $(M \times N)$ bytes of M rows and N columns;

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each column of N columns is formed as $(K \times (M + Q))$ or $(K \times (M + 2Q))$ bytes of Reed-Solomon code PO (Q is an integer of 1 or more); and

the error-correcting word P bytes is further added for each row of N bytes and each row of $(K \times (M + Q))$ or $(K \times (M + 2Q))$ rows is formed as $(N + P)$ byte Reed-Solomon code PI;

whereby as an overall block an error-correcting product code block is realized which constitutes $(K \times (M + Q) \times (N + P))$ or $(K \times (M + 2Q) \times (N + P))$ bytes Reed-Solomon error-correcting word having K information data block of $(K \times M \times N)$ bytes as information position.

Claims 2-24 (Canceled)